1. (Amended) An impulse heat sealer comprising:

a. a power source;

b. a heater circuit connected to the power source;

c. a press mechanism connected to the appropriate machine supporting mechanisms adapted to effect the actual sealing and material supporting functions; and

d. a heating wire; the heating wire being of unitary construction, self-supporting and adapted to receive current from the power source through electrode portions, and via a series of zigzags and gaps, arranged in a single planar relationship in such a way that substantially all the generated heat is dissipated in that plane alone to effect a continuous heat seal on the material being sealed.

2. (Previously presented) The impulse sealer of claim 1, wherein the electrode portions are defined by shoulders that are non-symmetrical with respect to the longitudinal axis of the heating wire.

3. (Previously presented) The impulse sealer of claim 1, wherein the zigzags extend a significant portion of the length of the longitudinal axis of the heater wire.

4. (Previously presented) The impulse sealer of claim 1, wherein the zigzags are spaced in a proximity with respect to each other such that when a seal is effected a unitary seal is obtained with no gaps therein.

5. (Previously presented) The impulse sealer of claim 1, wherein the function is that of a laminator.

6. (Previously presented) The impulse sealer of claim 1, wherein the function is that of a book-binder.

7. (Rewritten) A heater wire for use in an impulse sealer comprising:

a. a heat generating portion; and

b. electrode portions, the electrode portions located at the proximal and distal ends of the heat generating portion, wherein the heat generating portion is self-supporting and shaped into a desired uniform configuration for the impulse seal and arranged in a single planar relationship in such a way that substantially all the generated heat is dissipated in that plane alone, and wherein the electrode portions are broadened to prevent heat generation therefrom such that the broadened portions forming the electrode portions are non-uniform in surface area as compared to each other with respect to the longitudinal axis of the electrode portion.

8. (Previously presented) The heater wire of claim 7, wherein the heat generating portions of the heater wire are arranged proximal to a series of small gaps with respect to the heat generating portions thereof.

9. (Previously presented) The heater wire of claim 7, wherein the heater wire is configured in a zigzag shape with gaps formed between each of the zigzag regions that disappear in the final heat seal effected by the heater wire.

10. (Previously presented) The heater wire of claim 9, wherein the gaps are small in size and disappear in the heat seal product formed by the heater wire when the heater wire is used by an impulse sealer.

11. (Previously presented) The heater wire of claim 7, wherein the heater wire is formed of a thin plate of electrically high resistance material.

12. (Previously presented) The heater wire of claim 11, wherein the heater wire is formed from a thin plate of electrically high resistance material by a rolling process.

13. (Previously presented) The heater wire of claim 11, wherein the electrically high resistance material is patterned by a photo-etching process.

14. (Previously presented) The heater wire of claim 7, wherein the heat generating portion is formed from a thin plate of electrically high resistance metal including iron chromium and equivalents thereof.

15. (Previously presented) The heater wire of claim 7, wherein the heater wire is part of a laminating machine.

16. (Previously presented) The heater wire of claim 1, wherein the heater wire is part of a book-binding machine.

17. (Amended) A heater wire for use in an impulse sealer comprising:

a. a heat generating portion, said heat generating portion being formed of a heater wire configured such that the wire forms a plurality of small gaps arranged along a pre-determined portion of the extent of the heat generating portion, the gaps arranged in a single planar relationship in such a way that substantially all the generated heat is dissipated in that plane alone, and such that the gaps disappear in the final seal effected by heat diffusion when the wire is used by an impulse heat sealer; and

b. electrode portions, located at the proximal and distal portions of the heat generating portion and adapted to be connected to an appropriate power source.

18. (Previously presented) The heater wire of claim 17, wherein the gaps formed by the wire define a series of zigzags extending along a significant portion of the heat generating portion.

19. (Previously presented) The heater wire of claim 17, wherein the heater wire is formed of a thin plate of electrically high resistance material.

20. (Previously presented) The heater wire of claim 19, wherein the electrically high resistance material has been strengthened by a tempering process.

21. (Previously presented) The heater wire of claim 19, wherein the electrically high resistance material is patterned by a photoetching process.

22. (Previously presented) The heater wire of claim 17, wherein the heat generating portion is formed from a thin plate of electrically high resistance material such as iron chromium and equivalents thereof.

23. (Previously presented) The heater wire of claim 17, wherein the heater wire is part of a laminating machine.

24. (Previously presented) The heater wire of claim 17, wherein the heater wire is part of a book-binding machine.

COMMENTS

Applicant would again like to thank Examiner Jeffrey for the Interview on February 10, 2005, wherein the issue of the rejection was discussed. More specifically, the substitution of the heater wire of Bohener into the apparatus of Perrett was identified as the primary issue affecting the patentability of the instant claims.

Impulse sealers commonly use a linear and totally continuous element for sealing. This is done to insure that the seal that is formed by the element is uniform along its extent and that no gaps are present in the seal that would cause failure. In addition, it is desired that the seal be uniform in its strength along its extent and that no material failure due to the heating occur in the area proximal to the final seal. An example of such a wire and the seal it makes is attached as

Exhibit 1, as submitted in the Amendment of May 10, 2005, of which this Amendment is considered a continuation thereof.

Non-continuous or coiled type heating elements have been used in many applications for many years. These generate a quantity of heat, which flows outwardly from the coil but in a way that is not uniform due to the nature of the shape. Therefore, the ability to control the heat delivered to a receiving surface is limited by the shape of the coil because where the coil would make contact, intense heating would occur and in-between the metal portions less heat would be present making the resultant seal inconsistent. Examples of this are attached as Exhibits 3 and 4 from the Amendment of May 10, 2005. Close inspection of those seals show that a zig-zag shape wire does not give a uniform seal at all.

Applicant's zig-zag wire, however, does render a uniform seal. This is amply shown in Exhibit 2 with the resultant seal clearly showing the type of result that anyone in the art would desire. This result is due to the unique pattern of the zig-zag wire that directs the heat to uniformly flow across the plane of the element to effect consistent heat dissipation in the plane of the element itself. Thus it is shown by the exhibits that a mere substitution of any zig-zag wire into an impulse sealer is not a matter of choice.

If any ordinary skilled artisan in the sealer art were to make the substitution of the Bohener wire into the Perrett device, he would expect the seal result as shown in Exhibits 3 and 4. Thus, because of his skill, he would not choose this geometry, because as the exhibits clearly show, the end result is

unacceptable for most seal applications. Indeed, a customer buying a sealed container with this type of seal showing would believe that in fact no seal was in fact there for any purpose except decoration.

Applicant's seal on the other hand is an excellent example of a good seal. One cannot not tell the difference between a linear wire and Applicant's zig-zag upon inspection without testing. The seal is continuous and linear. This is not due to a mere part substitution but to a carefully arranged zig-zag pattern which is the crux of the invention.

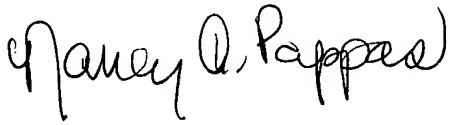
It is therefore submitted that on the surface the mere substitution of the wire of Bohener into Perrett was an easy task, but in reality, one of ordinary skill in the art would anticipate the result as shown in Exhibits 3 and 4 and not the result by virtue of Applicant's invention as shown in Exhibit 2. As discussed earlier, those Exhibits are part of the submission of May 10, 2005 to which this Amendment is a supplement thereof.

Thus it is submitted that Applicant has made a contribution to the art and that his device is not an obvious modification of known elements available to those of ordinary skill in the art, and that the instant claims are patentably distinct over the art of record and that the application is ready for issue. It is therefore requested that the Examiner issue the Notice of Allowance and pass the case to issue.

Should there be any further questions, Applicant's Agent can be reached at 813/977-1373 by phone or fax. Applicant's Agent would appreciate a telephonic

interview should there be any outstanding issues to expedite the allowance of the instant claims.

Respectfully submitted,



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